



# FirstNet<sup>®</sup>



## Initial Consultation Meeting

*Working together to bring broadband to Public Safety Entities*



**September 30, 2015**  
**Richmond, Virginia**

# Welcome & Introductions



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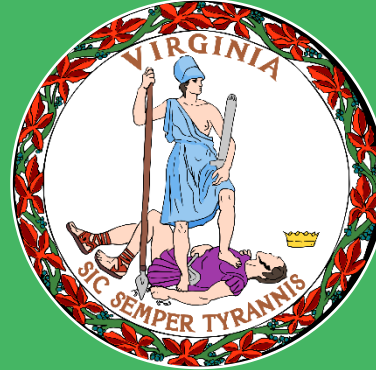
# Initial Consultation Goals



**Strengthen  
Our  
Relationship**



**Provide  
FirstNet  
Updates**



**Learn about  
Unique  
Needs of  
Virginia**



**Discuss  
Next Steps**

**Meeting Goals**



# Agenda — Initial Consultation



Time	Agenda Item	
8:30am	Welcoming Remarks	Virginia and FirstNet
9:00am	FirstNet Update & Consultation Process	FirstNet
	Commonwealth Update	Virginia
12:00pm	Lunch	
1:00pm	Data Collection Elements Discussion: Coverage, Users/Operations, Capacity, Current Service	FirstNet
	Virginia Data Collection Activities	Virginia
	Next Steps & Closing Remarks	Virginia and FirstNet
4:30pm	Adjourn	



# First Responder Communications



*Non-Mission Critical*

**The Current State**

*Mission Critical*

**Commercial LTE Service / Devices**



**Data**

**Voice**

**Land Mobile Radio (LMR) for Public Safety**



**Voice**

# First Responder Communications



*Non-Mission Critical*

**The Near-Term Vision**

*Mission Critical*

***FirstNet will ensure that emergency responders are provided with the first nationwide, high-speed, wireless broadband network dedicated to public safety***



**LTE Service / Devices**

**Congestion**

**Coverage**

**Outages**

**Data**

**Voice**

**Land Mobile Radio (LMR) for Public Safety**



**Voice**



# Nationwide Vision



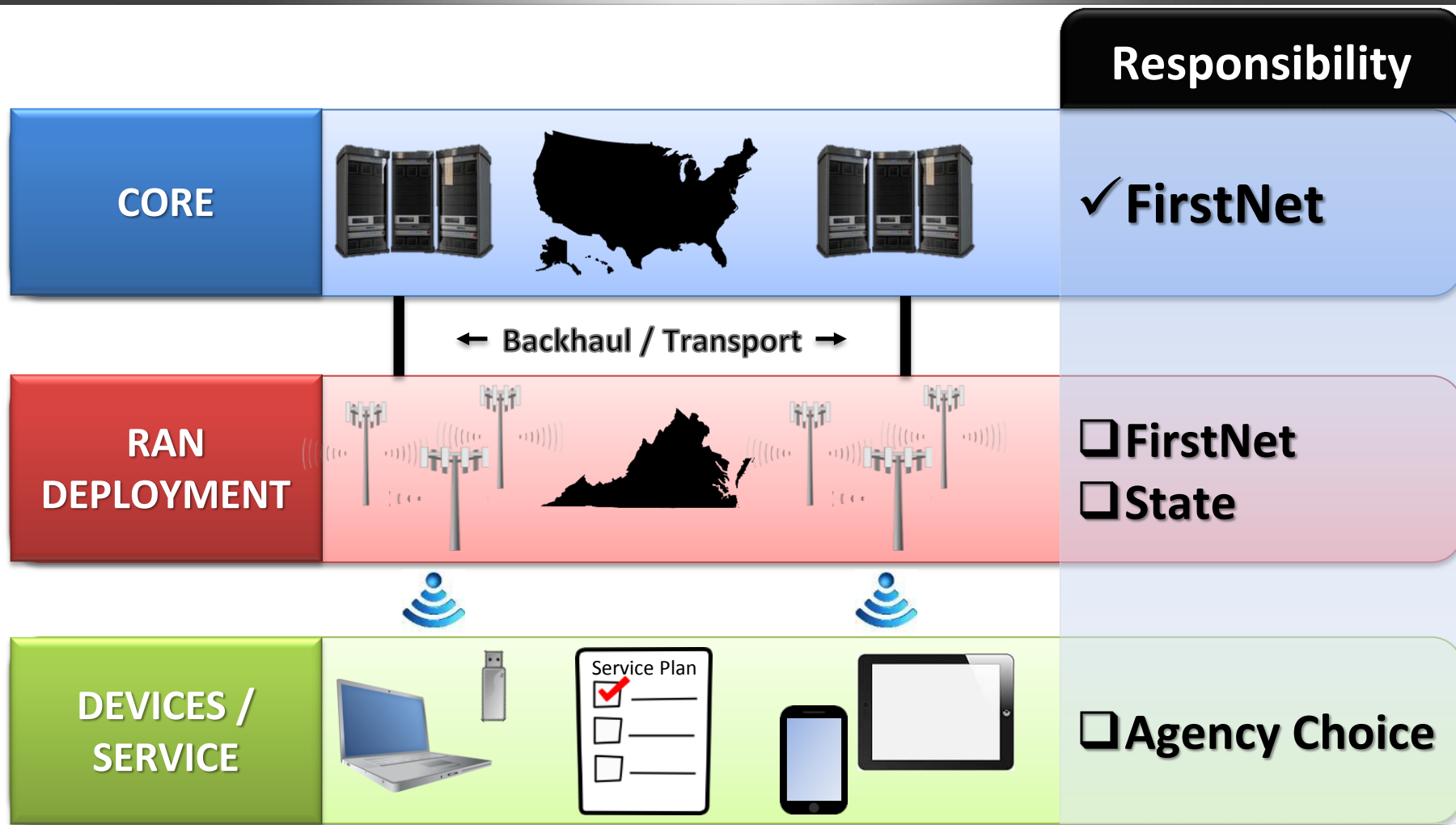
*Map from Mosaik Solutions LLC*

## PUBLIC SAFETY NEEDS

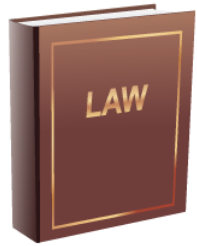
- ✓ Dedicated Spectrum
- ✓ Priority / Preemption
- ✓ Public Safety Grade
- ✓ Cybersecurity
- ✓ Public Safety Applications



# Responsibilities for Network Components



# Implementing the Vision



## THE LAW

2.22.12

FirstNet becomes law  
PL 112-96

## FUNDING



**\$7B** authorized to build the FirstNet network. Funded by spectrum auctions through 2022.

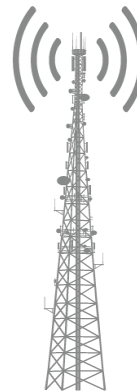
## GOVERNANCE



The FirstNet Board has **15** members, including those with telecommunications and public safety backgrounds.

Each Governor appoints **1** Single Point of Contact (SPOC) and governing body to represent the State's interests to FirstNet.

**40** member Public Safety Advisory Committee (PSAC) advises FirstNet on public safety intergovernmental matters.

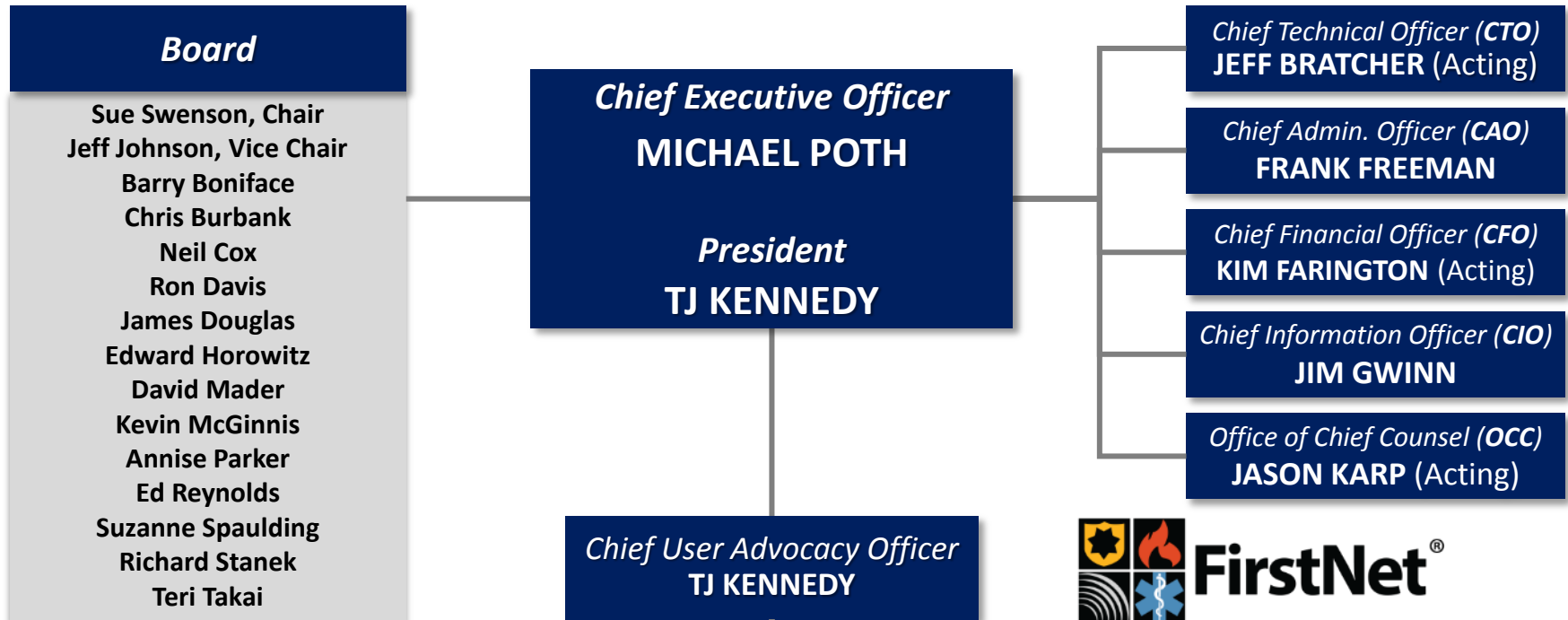


## BAND CLASS (BC) 14

**20MHz** of bandwidth has been dedicated to public safety in the prime upper **700MHz** frequency range.

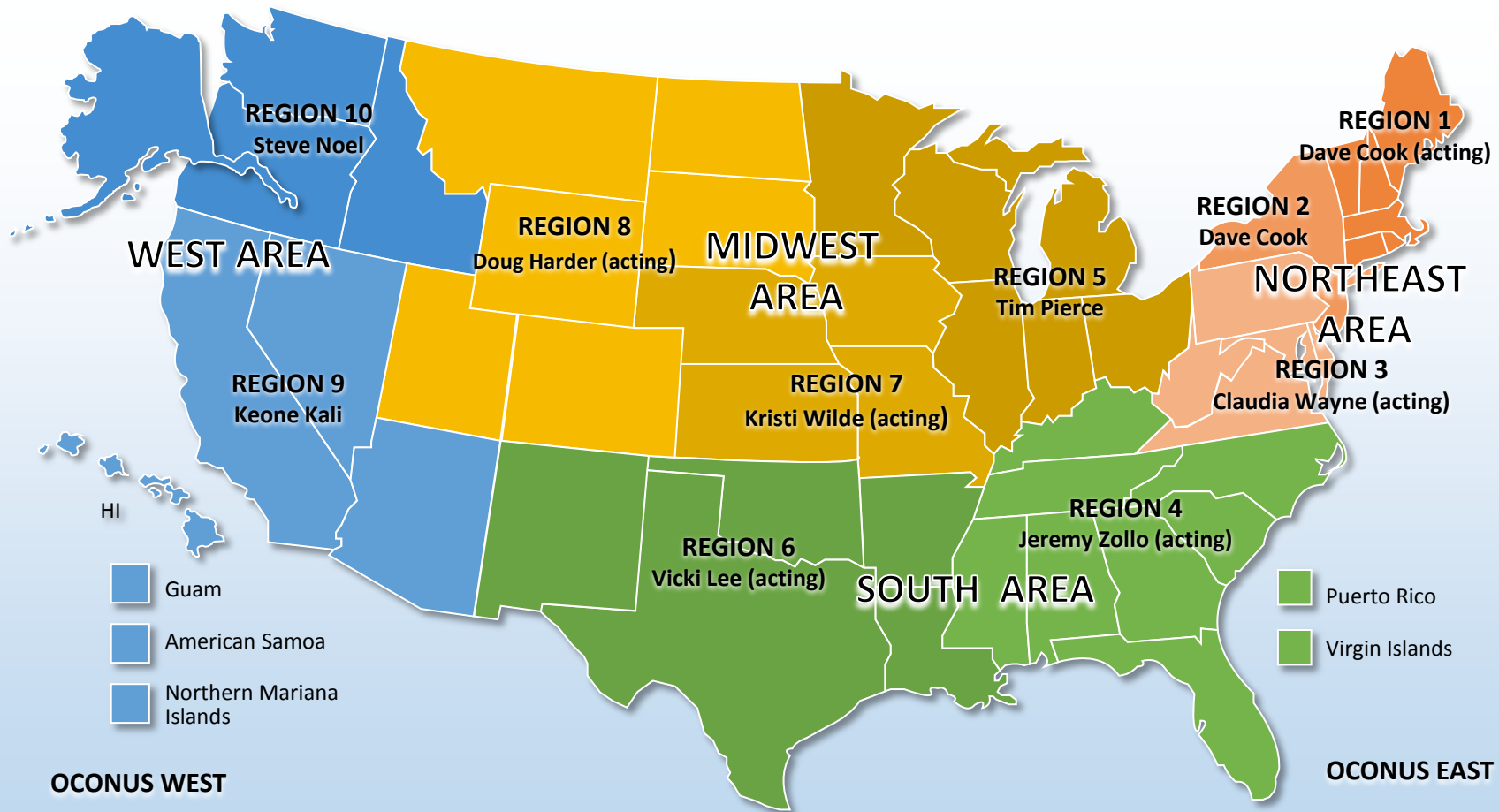
BC 17		BC 17		BC 17		BC 14	LMR	BC 13	BC 14	LMR
BC 12	BC 29	BC 12	BC 13	BC 14	LMR	BC 13	BC 14	LMR	BC 13	BC 14
T-Mobile US Cellular Sprint	AT&T Dish	T-Mobile US Cellular Sprint	AT&T Verizon	FirstNet PS Broadband	PS Narrowband	Verizon	FirstNet PS Broadband	PS Narrowband	Verizon	FirstNet PS Broadband
UL	UPLINK	DL	DOWNLINK	DOWNLINK	DOWNLINK	UPLINK	UPLINK	DOWNLINK	UPLINK	DOWNLINK
6 MHz	12 MHz	6 MHz	12 MHz	11 MHz	10 MHz	11 MHz	10 MHz	6 MHz	11 MHz	6 MHz
1 MHz Guard Bands										

# FirstNet Organization





# User Advocacy Regional Staffing Update



# Designing a Nationwide Network



# Leveraging an Evolving Landscape



**Aggregate LTE Coverage 3Q 2014**

Network Intelligence Provided By

**Mosaik**  
SOLUTIONS®

All coverage illustrated is derived from public information provided by terrestrial mobile operators. Not all operators choose to market coverage information. Standards for coverage representation vary among operators. Mosaik Solutions provides no warranty to the accuracy of the data. Analysis reflects 2010 U.S. Census Data.

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## PUBLIC SAFETY NEEDS

- ✓ Dedicated Spectrum
- ✓ Priority / Preemption
- ✓ Public Safety Grade
- ✓ Cybersecurity
- ✓ Public Safety Applications

## LEVERAGING INDUSTRY

- ✓ Existing Infrastructure
- ✓ Built & Maintained
- ✓ Global Standard
- ✓ Interoperability
- ✓ Economy of Scale



# Why Leverage Industry?

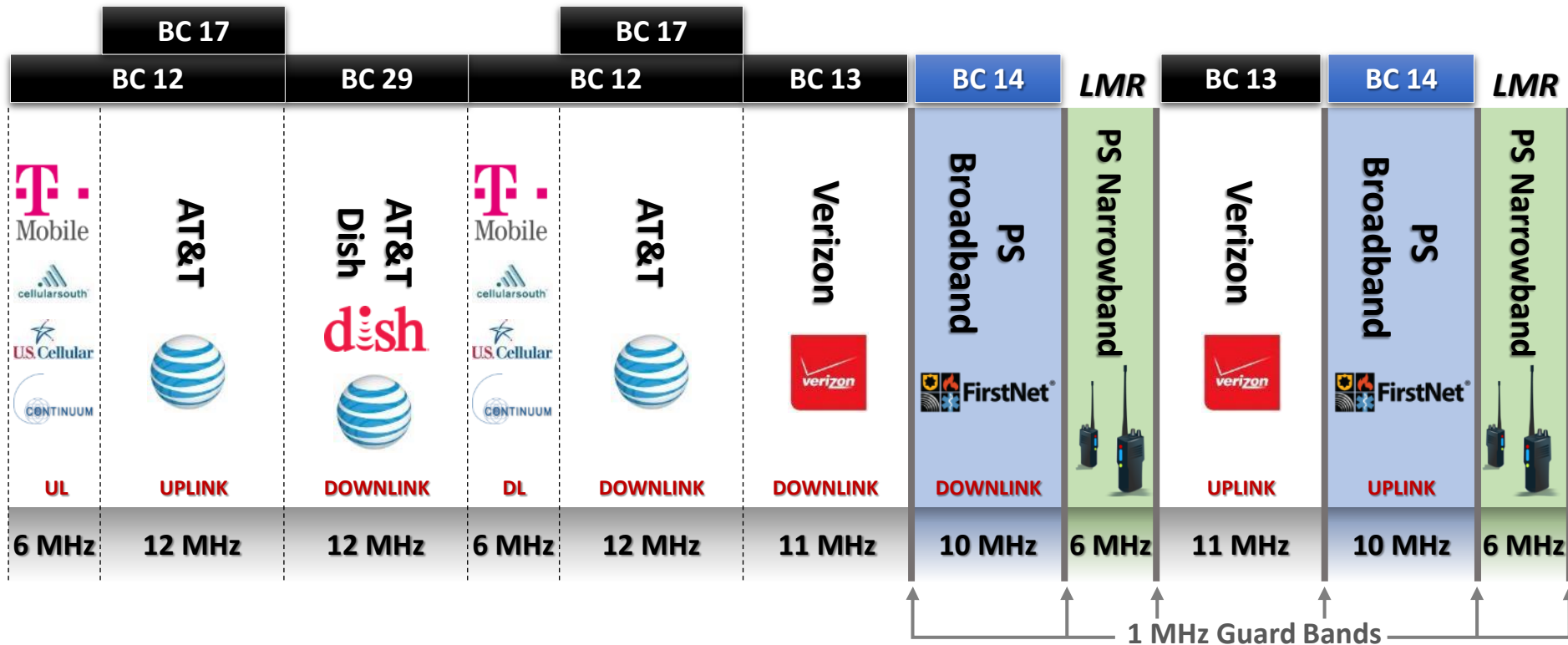
- Follow the marketplace to leverage economies of scale and keep costs low
- Commercial service providers lease sites from large tower companies
  - Site Management is their business
  - Tools and services in place for site acquisition
  - Some own 10,000s of sites
- An LTE RAN site has high demands
  - Multiple, large antennas
  - High bandwidth connectivity requirements
- RAN share options are attractive to share costs and speed deployment times
- Public Safety Grade requirements will be addressed when economically feasible and allowed by law



# FirstNet Spectrum – A Valuable Resource

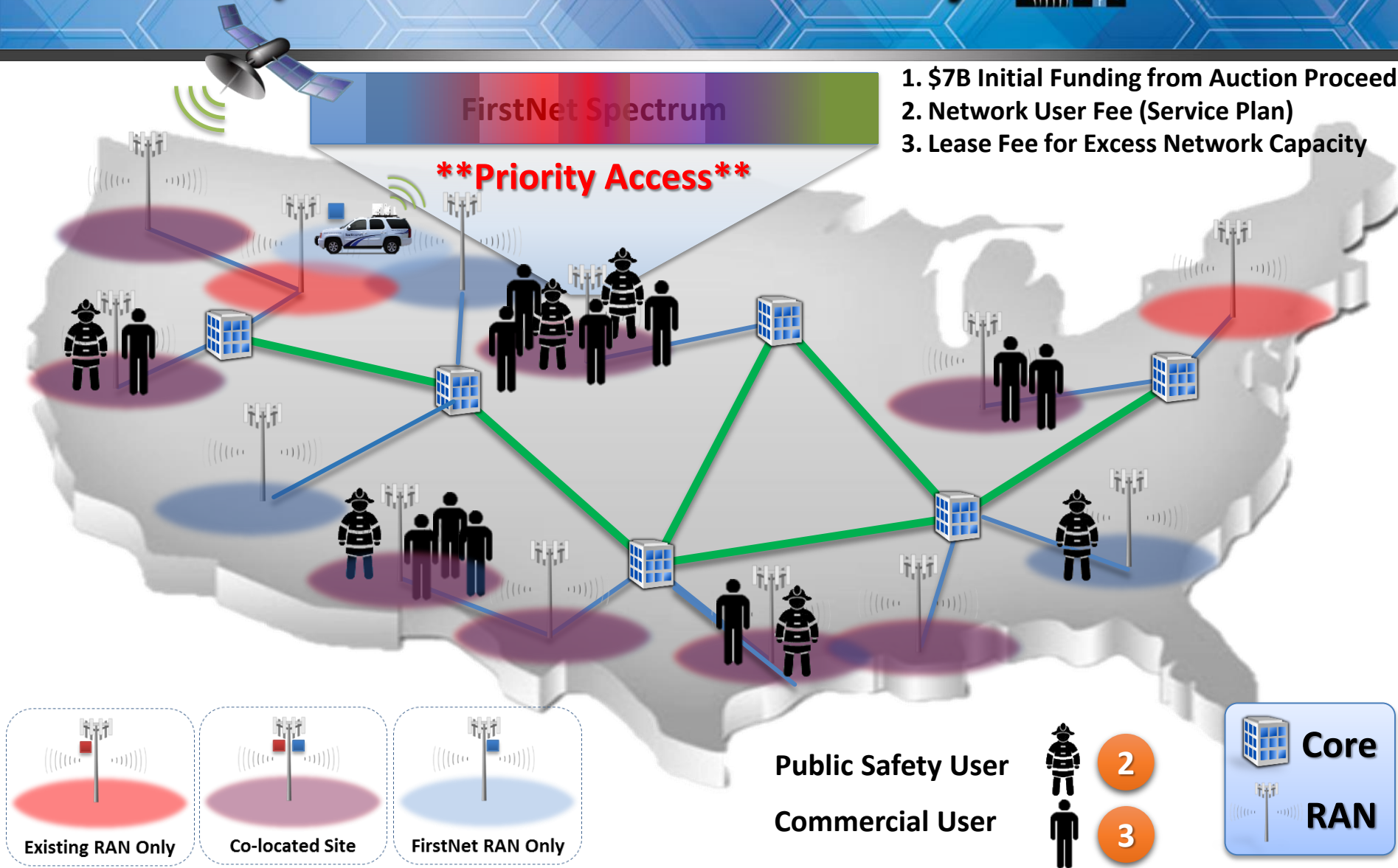


- FirstNet is the license holder for Public Safety's Broadband allocation – **Band Class (BC) 14**
- Commercial Carriers also operate in several bands outside of 700 MHz



# Revenue, Architecture & Priority

1. \$7B Initial Funding from Auction Proceeds
2. Network User Fee (Service Plan)
3. Lease Fee for Excess Network Capacity





# Rural Deployment

## Requirements of the Act

*“...shall require deployment phases with substantial rural coverage milestones as part of each phase of the construction and deployment of the network”*

- State Consultation Topic – identifying coverage objectives and inputs on a phased deployment

## Fiscal Approach

### Nationwide Reinvestment of Revenues

*(As proposed in 2<sup>nd</sup> public notice)*

## Potential Technical Options

- High power tower sites
- High power devices
- Deployable solutions (including SATCOM)



## Contractual Measures

- Considering RFP incentives for rural
- Network policies with partner(s) to evaluate existing infrastructure beyond initial deployment

*Note: The definition of rural does not determine coverage, our resources will determine coverage. The definition of rural will be used to measure whether substantial rural milestones have been included in each phase of deployment. Being included in the definition of rural does not guarantee coverage, nor does being excluded from it deny coverage.*

# Consultation & State Plan Process





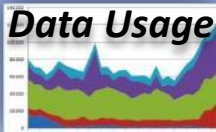
# Need Inputs to Get Answers

**Plan Options**



**Training**

**Data Usage**



**Users**

## FirstNet Consultation

**Deployables**



**Hardening**



**Security**



**Coverage Objectives**



**Devices**

**Applications**



**Core Network**

**Prioritization**

**\$7B**



**Excess Capacity Revenue**

## Self-Sustaining Network

**Fees**

**Deployment Costs**

**Operations & Maintenance Costs**

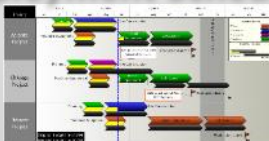
**PS Features**  
Priority, Security, Hardening, etc.

**PS Features**  
Priority, Security, Hardening, etc.



**Hardening Costs**

**Deployment Schedule**



**Available Devices**

**Core Design**



**Cost Estimates**

**Baseline Coverage**



**Excess Capacity Valuation**

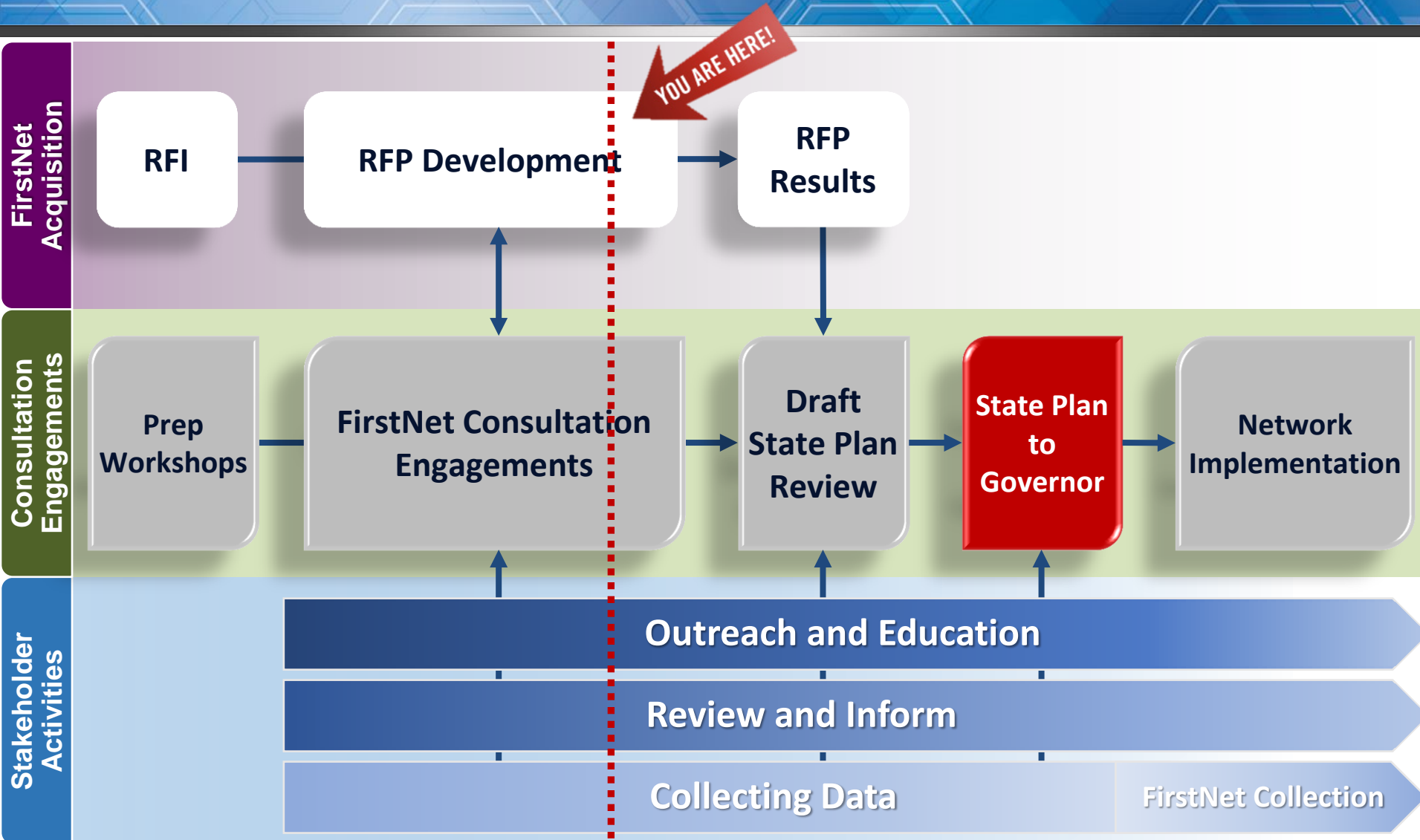


**Adoption Estimates**

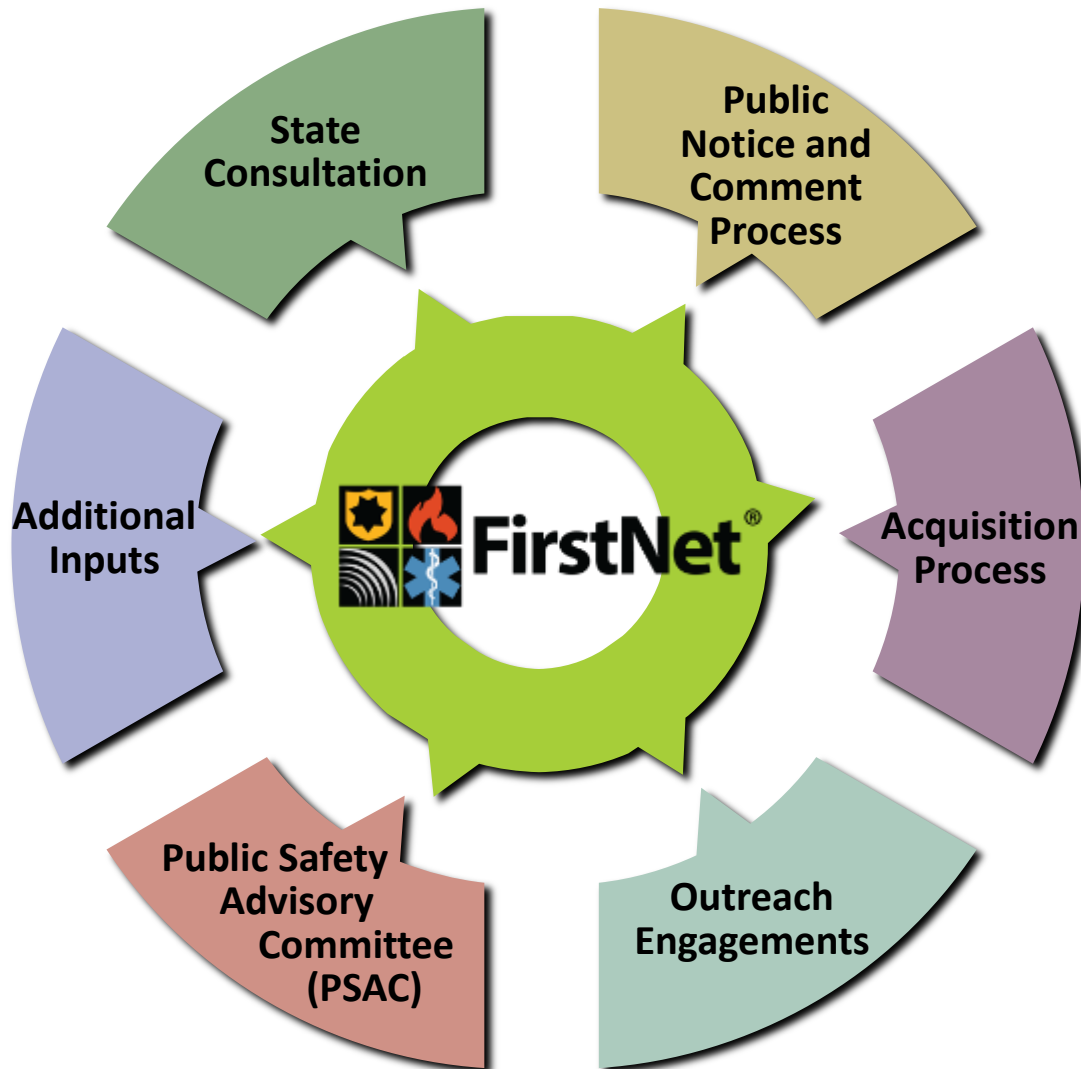
## FirstNet Acquisition



# State Plan Development Process



# Stakeholder Inputs



## State Consultation

1. Construction of a Core and RAN build out
2. Placement of towers
3. Coverage areas of the network
4. Adequacy of hardening, security, reliability, and resiliency
5. Assignment of priority to local users
6. Assignment of priority and selection of entities seeking access to or use of the network
7. Training needs of local users

# Statement of Objectives



-  Build, Deploy, Operate and Maintain the NPSBN
-  Financial Sustainability
-  Compelling and Competitively Priced Services
-  Device Ecosystem
-  Application Ecosystem
-  Accelerate Speed to Market
-  User Service Availability
-  Service Capacity
-  Cyber Security
-  Priority Services
-  Integration Of Opt-out State RANs
-  Integrate Existing State/Local/Commercial/Federal Infrastructure To Support NPSBN Services
-  Lifecycle Innovation
-  Program and Business Management
-  Customer Care and Marketing
-  Facilitate FirstNet's Compliance With the Act and Other Laws



# The FirstNet Opportunity



**\$7B**



**Fees**



**Synergies**



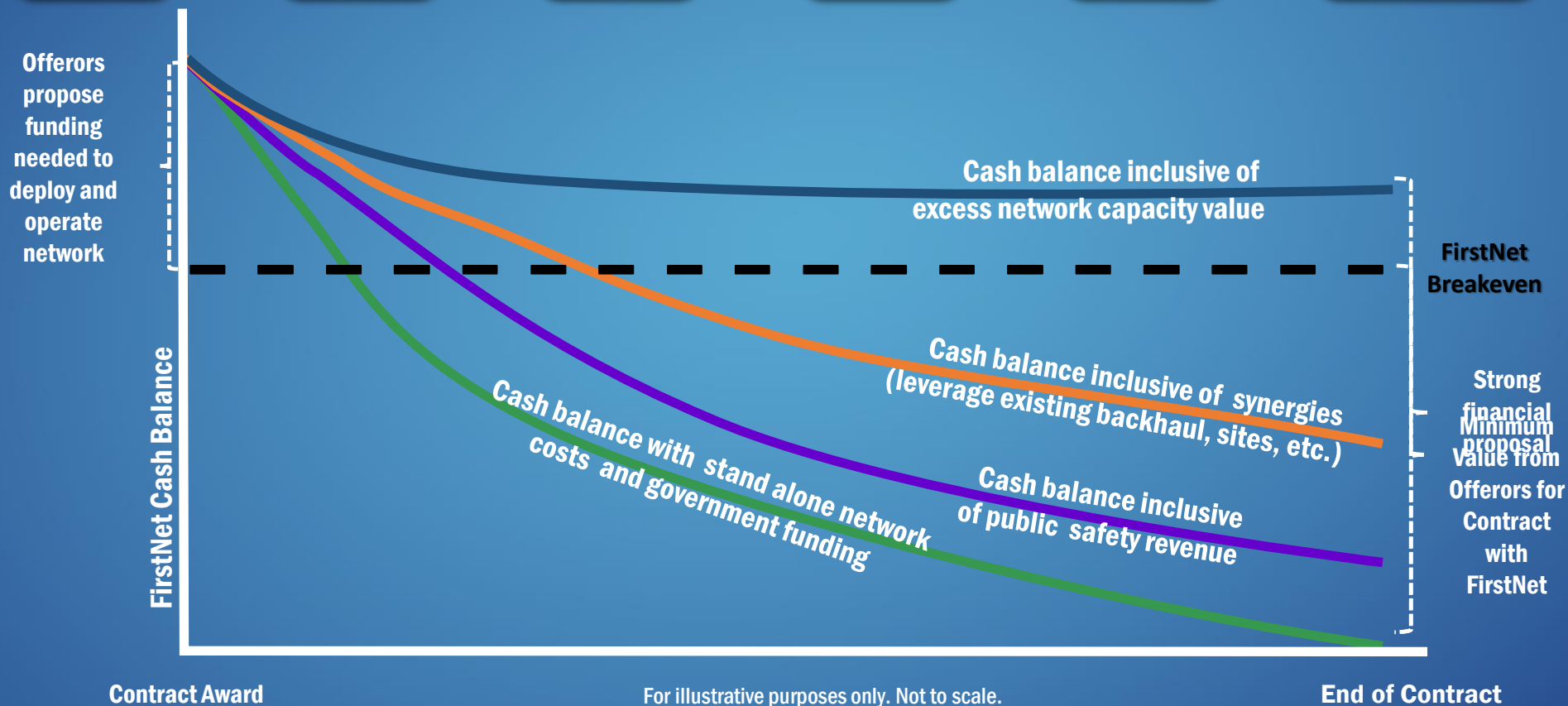
**Excess  
Network  
Capacity**



**Costs**



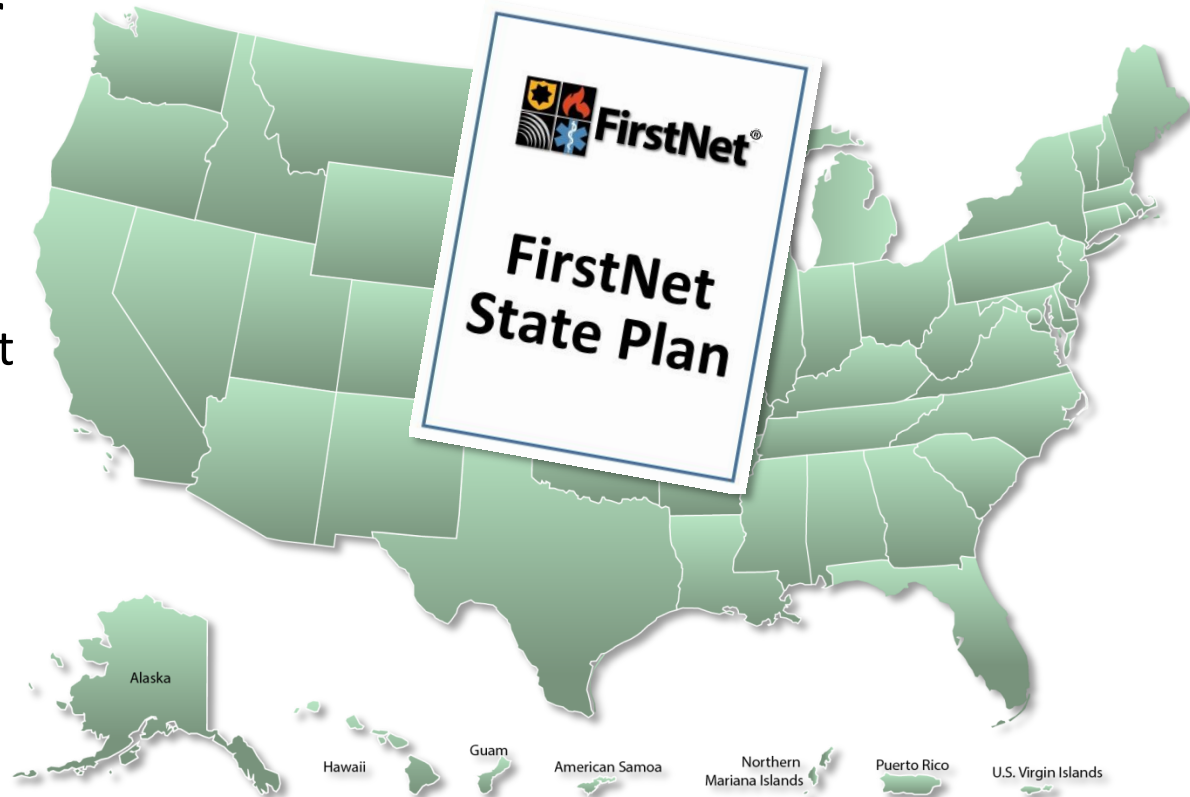
**Financial  
Sustainability**



# State Plan Process

**Under the Act, the Governor has 90 days to choose whether to**

1. Participate in the FirstNet proposed radio access network (RAN) deployment or
2. Assume responsibility to conduct its own state RAN deployment



# What is a State Plan?



- ☒ **Contains the Information the Act Requires**
- ☒ **Contains the Information the State Desires**
- ☒ **Captures a Snap Shot in Time**
- ☒ **Allows the Governor to Make an Informed Decision on the FirstNet Value**
- ☒ **Is a Non-Binding Document**
- ☒ **Is Implementable and Affordable**
- ☒ **Supports the FCC and NTIA in Evaluation of a State's Alternative RAN Plan**



# FirstNet Network Benefits



**Dedicated to  
Public Safety**



**Public Safety  
Apps /  
Services**

**QoS, Priority  
& Preemption  
(QPP)**



**Situational  
Awareness**



**Local  
Control**



**Public Safety  
Grade**

***“FirstNet must provide a service that  
is compelling to public safety in  
order to earn your business.”***

**Sue Swenson**  
Chairwoman, FirstNet

# Facilitated Discussion:

## Virginia & Public Safety Mobile Data





**Key Discrimi**

***What could FirstNet offer to improve on your current service?***

***What do you like about your current service?***

**Reliability**

***What would make your agency become a FirstNet Subscriber?***

# Coordination with Provider



**As a government organization with a public safety stakeholder community, FirstNet hopes to tailor our coordination process to your needs**

- How often does your agency interact with your provider?
- Does your agency use telephone support? Web? Dedicated person?
- Does your agency have a process to report dead spots to the provider? How do they address them?
- How does your agency request deployables for planned / unplanned events?

***“We use the 1-800 number for technical support just like everyone else”***

***“We ask our provider for COWs each year for the horse race. They are responsive but it’s never enough”***

# Budget & Planning



**FirstNet is a not for profit government organization with all user fees required to be reinvested into the Network**

- How far in advance do you conduct budget planning for mobile data services?
- How is budgeting/planning handled differently for the device & the subscriber fee?
- What procurement method is the most desirable for your agency?

***“If this is considered a capital expense, we do that planning five years in advance”***

***“If there is a way to keep the cost as a fixed amount each month, it would help with our county commission”***



# Application & Device Management



FirstNet hopes to create a device and application ecosystem focused on public safety

- Do you restrict the applications / websites that your personnel have access to?
- Do you have someone in your agency that is dedicated to device provisioning
- How do you maintain / repair your devices?
- How are software upgrades handled?

***“When we placed too many restrictions on the devices, people just used their personal ones instead”***

***“Our State contract limits us to two or three device makes/models”***

# Personal / Shared Devices



**While FirstNet cannot sell directly to the general public, we recognize the variety of volunteer, non-governmental organizations, and other types of personnel that support public safety**






- Do you allow personal devices (BYOD)?
- Does your agency provide equipment allowances?
- Are there challenges with devices that are shared across multiple personnel (e.g., one MDT across multiple shifts)?

***“We don’t let our law enforcement personnel use personal devices because it opens it up to discovery as evidence”***

# Stay Connected with FirstNet



- The FirstNet **website** ([www.firstnet.gov](http://www.firstnet.gov)) provides valuable information, including:
  - Program background and procurement information
  - Fact sheets, Presentations
  - Blogs
  - SPOC and PSAC information
  - FirstNet Board meeting materials.
- FirstNet's **social media** accounts are key resources for keeping stakeholders informed on the latest FirstNet news.

-  Twitter (@FirstNetGov)
-  Google+ (+FirstNetGov)
-  YouTube (FirstNetGov)
-  Flickr (FirstNetGov)
-  LinkedIn (First Responder Network Authority)

